

**REMARKS**

The Examiner's recognition of Applicants' invention by the indication of allowable subject matter in claims 7 and 14 is gratefully acknowledged.

Claim 1 has been amended to recite that the claimed composite material comprises three (top, middle and bottom) layers of matrix material and two layers of reinforcement material, wherein the top layer and the bottom layer are a first matrix material of a first thickness and the middle layer is a second matrix material of a second thickness, features originally included in claims 6 and 7, now cancelled. Claim 9 is similarly amended to call for three layers of matrix material and two layers of non-conductive reinforcement material, wherein the top layer and the bottom layer are a first matrix material of a first thickness and the middle layer is a second matrix material of a second thickness, features of claims 13 and 14, now cancelled. Claims 17 is amended to recite the step of interleaving three layers of matrix material and two layers of nonconductive reinforcement material, wherein the top layer and the bottom layer are a first matrix material of a first thickness and the middle layer is a second matrix material of a second thickness. Claims 21 and 22 are amended to more particularly call out first and second layers of non-conductive material and first, second and third layers of conductive material arranged in a stack as recited therein, and further to set forth that the top layer and the bottom layer are a first matrix material of a first thickness and the middle layer is a second matrix material of a second thickness.

Also, claims 1, 9, 17, 21 and 22 are amended to delete "substantially" in response

to an objection thereto, as discussed herein. Claims 8 and 15 are amended to correct dependency.

*Claim Rejection under 35 USC § 112*

Claims 1-3 and 5-22 were rejected under 35 U.S.C. § 112 with respect to the term “substantially non-conductive” in reference to the reinforcement material. The independent claims 1, 9, 17, 21 and 22 have been amended to delete “substantially” and more clearly recite that the reinforcement material is non-conductive, as described at page 5, line 19, through page 6, line 10. The rejection listed the remaining dependent claims, which do not recite “substantially non-conductive,” without presenting other grounds, and it is believed that the dependent claims were included because of their dependency on the rejected independent claims.

In view of the amendments, it is respectfully requested that the rejection under Section 112 be withdrawn and that the claims be allowed.

*Claim Rejection under 35 USC § 103 based on Kobayashi et al. or Viala et al.*

Claims 1-2, 6, 8-10, 13, 15, 16, and 21-22 were rejected under 35 U.S.C. § 103 as unpatentable over United States Patent No. 5,558,728, issued to Kobayashi et al. in 1996. Claims 1, 3, 5, 9-12, 17 and 20-22 were rejected under 35 U.S.C. § 103 as unpatentable

over United States Patent No. 4,476,206, issued to Viala et al. in 1984.

Kobayashi et al. shows a Ti-based composite reinforced with SiC fibers, col. 2, lines 9-16 Viala et al. shows a plate for a lead-acid cell that comprises non-conductive threads embedded in a metal matrix, col. 3, lines 1-10. However, as recognized in the rejection, neither reference teaches or suggests forming the top and bottom layer of a first matrix material having a first thickness and the middle layer of a second matrix material having a second thickness, as in Applicants' invention.

Claim 1 is directed to Applicants' pack-bonded, multiphase composite material for use in a cell. The claim has been amended to more particularly point out that the composite material comprises a top layer and a bottom layer formed of a first matrix material having a first thickness and a middle layer formed of a second matrix material of a second thickness. Neither Kobayashi et al. nor Viala et al. show this feature. Thus, the references do not teach or suggest Applicants' composite material set forth in claim 1.

Claims 2-3, 5, and 8 are dependent upon claim 1 and not suggested by the references for the reasons set forth with regard to that claim.

Claim 9 is directed to Applicants' method of producing a composite material. The claim has been amended to recite a top layer and a bottom layer formed of a first matrix material having a first thickness and a middle layer formed of a second matrix material of a second thickness, similar to claim 1. Accordingly, the references do not show Applicants' method in claim 9, or in claims 10-12 and 15-16 dependent thereon.

Claim 17 is also directed to a method, similar to claim 9, but including features preferred in the practice Applicants' invention. As for claims 1 and 9, the claim has been amended to recite a top layer and a bottom layer formed of a first matrix material having a first thickness and a middle layer formed of a second matrix material of a second thickness. Accordingly, the references do not show Applicants' method in claim 17, or dependent claims 18-20.

Claim 21 is directed to Applicants' composite material, is amended similar to claim 1 to recite a top layer and a bottom layer having a first thickness and a middle layer having a second thickness, and is not shown by the references for the reasons set forth with regard to claim 1.

Claim 22 is directed to Applicants' method, is amended to recite a top layer and a bottom layer having a first thickness and a middle layer having a second thickness, and is not shown by the references for the reasons set forth with regard to claim 1, 9 and 17.

Accordingly, it is respectfully requested that the rejection of the claims be reconsidered in view of the amendments thereto and withdrawn, and that the claims 1-3, 5, 8-12, and 15-22 be allowed.

*Conclusion*

It is believed, in view of the amendments and remarks herein, that all grounds of rejection of the claims have been addressed and overcome, and that all claims are in condition for allowance. If it would further prosecution of the application, the Examiner is urged to contact the undersigned at the phone number provided.

The Commissioner is hereby authorized to charge any fees associated with this communication to Deposit Account No. 50-0831.

Respectfully submitted,



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